Abdominal pain, nausea, and vomiting in a 10-year-old girl

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A 10-year-old white girl was brought to the emergency department by her parents for extreme abdominal pain, nausea and vomiting, and decrease in appetite. The patient's mother said she began complaining of the pain the previous morning and the pain was progressive throughout the day and night, eventually leading them to bring the child to the emergency room at about 2:00 AM. At that time, the patient was tachycardic and in extreme pain. She had a white blood cell count of 18.9 $\times 10^3/\mu L$. A computed tomography (CT) scan was done *(Figures 1–3).*

What is the diagnosis?

Figure 1. Scout radiograph for the CT scan showing small bowel obstruction and multiple unusual densities throughout the colon (arrows).

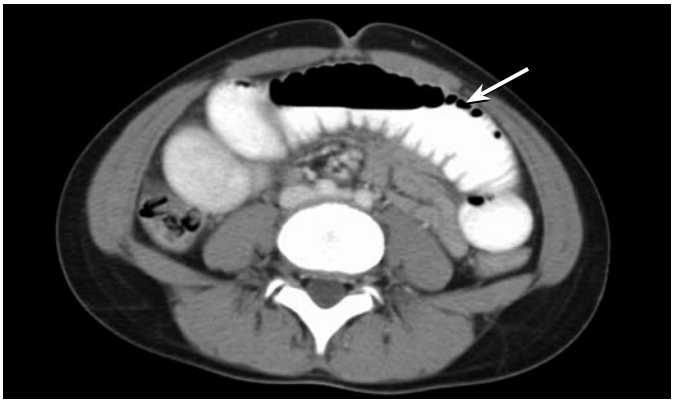

Figure 2. CT abdomen axial image showing small bowel dilation (arrow).

Figure 3. CT images showing a fatty-density bezoar intraluminal in the mid to distal ileum, causing small bowel obstruction. Notice the contents of the large intestine.

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Figure 4. A closer view of Figure 3b, showing the unshelled sunflower seeds in the colon (arrows).

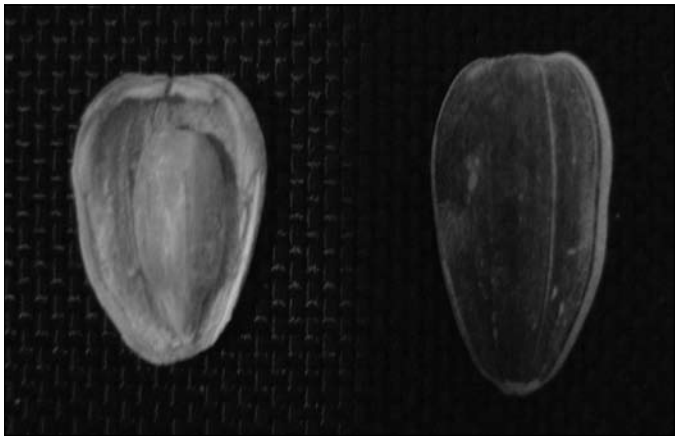

Figure 5. A sunflower seed.

DIAGNOSIS: Small bowel obstruction with sunflower seed bezoar. Multiple unshelled seeds were seen elsewhere throughout the intestine *(Figures 4 and 5).* After the CT scan was performed, further clinical history was elicited, and the child said that she had been eating sunflower seeds for the past 2 days. The exact volume of seeds was unknown.

The operative report described a complete small bowel obstruction with a transition point just distal to a palpable intraluminal mass. The intraluminal mass was solid and freely mobile. The mass was easily "milked" forward through the distal small intestine and into the cecum. No residual mass, adhesion, intussusception, or anatomical abnormality was found. The mass eventually passed through the colon postoperatively without any difficulty. No enterotomy was needed. Small bowel obstruction with sunflower seed meat bezoar was diagnosed postoperatively.

DISCUSSION

A bezoar is a mass of indigestible or poorly digestible material that forms within the digestive tract. Bezoars often lead to intestinal obstruction, as in our patient. The specific type of bezoar seen in this case was phytobezoar, which comprises plant material such as vegetable or fruit fibers or seeds. Other types of bezoars include trichobezoar, composed of hair, and lithobezoar, composed of hard concretions such as small stones or pebbles.

Clinically, these patients often present with signs and symptoms of bowel obstruction. A palpable abdominal mass is occasionally found. Upon rectal examination, the presence of the "colonic crunch sign" can increase the suspicion of bezoar obstruction. The colonic crunch sign is defined as the palpation of a prickly mass on digital rectal examination and can be found in sunflower seed bezoar and lithobezoar (1).

Intestinal obstruction with sunflower seed bezoar is not uncommon, and several case reports have been published. One study from Israel found that seed bezoars found in the rectum were the most common cause of fecal impaction requiring hospitalization (2). Caution is advised in allowing young children to consume seeds if they are unable to shell and chew the seeds prior to ingestion. Also, dietary consumption of unshelled seeds or seeds with shell fragments should be accompanied by an awareness that large quantities may lead to phytobezoar formation and intestinal obstruction.

Acknowledgments

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1. Melchreit R, McGowan G, Hyams JS. "Colonic crunch" sign in sunflower-seed bezoar. *N Engl J Med* 1984;310(26):1748–1749.
2. Eitan A, Bickel A, Katz IM. Fecal impaction in adults: report of 30 cases of seed bezoars in the rectum. *Dis Colon Rectum* 2006;49(11):1768–1771.